The following is a complete listing of the claims, and replaces all earlier version and listings.

Claim 1 (currently amended): An image processing method comprising the steps of:

receiving an input color image signal;

determining whether or not an input color image signal received in [[the]] said receiving step represents achromatic color;

correcting the input color image signal according to an observation condition to produce a corrected input color image signal; and

converting, after said correcting step, the corrected input color image signal produced in [[the]] said correcting step into an achromatic color image signal when it is determined in said determining step that the input color image signal represents achromatic color, and not converting the corrected input color image signal when it is determined in said determining step that the corrected input color image signal does not represent achromatic color.

Claim 2: (previously presented): A method according to Claim 1, wherein the input color image signal depends on an input-side observation condition and is device-independent .

Claim 3: (previously presented): A method according to Claim 1, wherein the input color image signal is represented by an RGB color space according to a standard white point of input-side observation light.

Claim 4 (previously presented): A method according to Claim 1, wherein, in said correcting step, the input color image signal, which depends on an input-side observation condition, is transformed into a corrected input color image signal, which depends on an output-side observation condition, and

wherein, when the input color image signal, which depends on the input-side observation condition, is determined in the determining step to represent achromatic color, the achromatic color image signal produced in the converting step by converting the corrected input color image signal produce in the correcting step, is an achromatic color signal according to a standard white point of output-side observation light.

Claim 5 (previously presented): A method according to Claim 1, wherein the step further comprises the step of converting transforming a device-dependent input color image signal into a device-independent input color image signal based on an input profile, and

wherein whether or not said transforming step is executed depends on information in the input profile.

Claim 6 (previously presented): A method according to Claim 1, wherein whether or not said correcting step is executed depends on a user's manual instruction.

Claim 7 (previously presented): A method according to Claim 1, wherein the converting step further comprises converting the corrected input color image signal produced in the correcting step into an output-device-dependent color image signal based on an output profile.

Claim 8 (currently amended): An image processing apparatus comprising:

an input unit adapted to receive an input color image signal;

an achromatic color detection unit adapted to determine whether or not an input color image signal received by [[the]] said input unit represents achromatic color;

a correction unit adapted to correct the input color image signal according to an observation condition to produce a corrected input color image signal; and

a conversion unit adapted to convert the corrected input color image signal produced by the correction unit into an achromatic color image signal when it is determined by said achromatic color detection unit that the color image signal represents achromatic color, and not convert the corrected input color image signal when it is determined by said achromatic color detection unit that the corrected input color image signal does not represent achromatic color.

Claim 9 (currently amended): A computer-readable storage medium storing a computer-readable program executing an image processing method, said program comprising:

code for receiving an input color image signal;

code for determining whether or not a received input color image signal represents achromatic color;

code for correcting the input color image signal according to an observation condition to produce a corrected input color image signal; and

code for converting ~~said~~ <u>the</u> corrected input color image signal produced by <u>execution of</u> the code for correcting into an achromatic color image signal when it is determined ~~by said code for determining~~ that the input color image signal represents achromatic color<u>, and not converting the corrected input color image signal when it is determined that the corrected input color image signal does not represent achromatic color</u>.

Claim 10: (previously presented): A method according to claim 1, further comprising the steps of:

obtaining a conversion condition for converting the input color image signal into a device-independent color space based on a standard white point of input-side light; and

converting the input color image signal according to the conversion condition,

wherein said determining step includes determining whether or not the converted input color image signal represents achromatic color.

Claim 11: (previously presented): A method according to Claim 10, wherein the device-independent color space is defined by red, green and blue primary color components.

Claim 12: (previously presented): A method according to Claim 1, wherein the correction of the input color image signal according to the observation condition in said correcting step is based on a color appearance model which performs a non-linear correction.

Claims 13-15 (canceled).

Claim 16 (currently amended): An image processing method comprising the steps of:

converting, based on an input profile, ~~an input-device-dependent~~ <u>a first</u> color image signal <u>depending on an input device</u> to ~~an input-device-independent~~ <u>a second</u> color image signal[[,]] <u>which does not depend on the input device but</u> which depends on an input-side observation condition;

converting, using a conversion condition according to a white point of the input-side observation condition, the ~~input-device-independent~~ <u>second</u> color image signal~~, which is depends on the input-side observation condition,~~ to ~~an input-device-independent~~ <u>a third</u> color image signal composed of a red component, a green component, and a blue component~~, and which depends on the input-side observation condition~~;

~~correcting, using a non-linear model according to the input-side observation condition and an output-side observation condition, the color image signal to generate a color image signal according to the output-side observation condition;~~

~~converting, based on an output profile, the color image signal produced in said correcting step according to the output-side observation condition to an output-device-dependent color image signal;~~

~~outputting the color image signal produced in said step of converting based on the output profile;~~

~~determining whether or not the color image signal represents achromatic color by determining whether or not the red component, the green component, and the blue component, composing the output-device-dependent color image signal, are approximately equal;~~

~~wherein, when it is determined in said determining step that the color image signal represents achromatic color, the color image signal is corrected according to the output-side observation condition to represent achromatic color and said step of converting based on the output profile is then executed~~

<u>determining whether or not the third color image signal represents achromatic color by determining whether or not the red component, the green component, and the blue component are approximately equal;</u>

<u>correcting, using a non-linear model according to the input-side observation condition and an output-side observation condition, the third color image signal to generate a fourth color image signal depending on the output-side observation condition;</u>

<u>converting the fourth color image signal into an achromatic color image signal when it is determined in said determining step that third color image signal represents achromatic color, and not converting the fourth color image signal when it is</u>

determined in said determining step that the third color image signal does not represent achromatic color; and

performing a conversion based on an output profile to generate an output-device-dependent color image signal.

Claim 17 (currently amended): An image processing method according to Claim 16, wherein ~~whether or not to execute said correcting step to generate the color image signal which represents achromatic color depends on~~ whether the conversion of the fourth color image signal is executed or not, is controlled based on information acquired from the input profile and information based on the output profile.

Claim 18 (currently amended): A computer-readable storage medium storing a program executing an image processing method, said program comprising:

code for converting, based on an input profile, an input-device-dependent color image signal to an input-device-independent color image signal, which is depends on an input-side observation condition;

code for converting, using a conversion condition according to a white point of the input-side observation condition, the input-device-independent color image signal, which is depends on the input-side observation condition to an input-device-independent color image signal composed of a red component, a green component, and a blue component, and which depends on the input-side observation condition;

code for correcting, using a non-linear model according to the input-side observation condition and an output-side observation condition, the color image signal to generate a color image signal according to the output-side observation condition;

code for converting, based on an output profile, the color image signal produced by execution of said code for correcting according to the output-side observation condition to an output-device dependent color image signal;

code for outputting the color image signal produced by execution of said code for converting based on the output profile;

code for determining whether or not the color image signal represents achromatic color by determining whether or not the red component, the green component, and the blue component, comprising the color image signal, are approximately equal;

wherein, when it is determined upon execution of said code for determining that the color image signal represents achromatic color, the color image signal is corrected according to the output-side observation condition to represent achromatic color and said code for converting based on the output profile is then executed

code for determining whether or not the third color image signal represents achromatic color by determining whether or not the red component, the green component, and the blue component are approximately equal;

code for correcting, using a non-linear model according to the input-side observation condition and an output-side observation condition, the third color image signal to generate a fourth color image signal depending on the output-side observation condition;

code converting the fourth color image signal into an achromatic color image signal when it is determined that third color image signal represents achromatic color, and not converting the fourth color image signal when it is determined that the third color image signal does not represent achromatic color; and

code for performing a conversion based on an output profile to generate an output-device-dependent color image signal.

Claim 19 (canceled).

Claim 20 (previously presented): An image processing method according to Claim 16, wherein said step of converting using a conversion condition according to a white point uses a standard white point.

Claim 21   (previously presented): A storage medium according to Claim 18, wherein said code for converting using a conversion condition according to a white point, effects conversion that uses a standard white point.

Claim 22 (currently amended): An image processing apparatus according to Claim [[19]] 23, wherein said conversion unit that converts using a conversion condition according to a white point uses a standard white point.

Claim 23. (new): An image processing apparatus comprising:

a first conversion unit adapted to convert, based on an input profile, a first color image signal depending on an input de vice into a second color image signal which does not depend on the input device and which depends on an input side observation condition;

a second conversion unit adapted to convert, using a conversion condition according to a standard white point of the input-side observation condition, the second color image signal into a third color image signal composed of a red component, a green component and a blue component;

a determination unit adapted to determine whether or not the third color image signal represents achromatic color by determining whether or not the red component, the green component and the blue component are approximately equal;

a correction unit adapted to correct, using a non-linear model according to the input-side observation condition and an output-side observation condition, the third color image signal to generate a fourth color image signal depending on the output-side observation condition;

a third conversion unit adapted to convert the fourth color image signal into an achromatic color image signal when it is determined by said determination unit that the third color image signal represents achromatic color, and not to convert the fourth color image signal when it is determined by said determination unit that the third color image signal does not represent achromatic color; and

a fourth conversion unit adapted to perform a conversion based on an output profile to generate an output-device dependent color image signal.